What is claimed is:

1. A method for obtaining heterologous immunoglobulin from the milk of a transgenic mammal comprising the steps of:

a. introducing into the germline of said mammal DNA comprising the protein-coding sequences of said immunoglobulin, said DNA operatively linked at its 5' terminus to a promoter sequence that supports the preferential expression of said genes in mammary gland epithelial cells, and said DNA operatively linked at its 3' terminus to a sequence containing a polyadenylation site, and

b. obtaining milk from said mammal.

2. The method of claim 1 wherein said mammal is selected from the group consisting of mice, cows, sheep, goats, oxen, camels, and pigs.

3. The method of claim 1 wherein said promoter is selected from the group consisting of the casein promoter, the beta lactoglobulin promoter, the whey acid protein promoter, and the lactalbumin promoter.

4. The method of claim 1 wherein said immunoglobulin comprises heavy and light chains.

5. The method of claim 1 wherein said immunoglobulin comprises a single polypeptide chain.

6. The method of claim 1 wherein said immunoglobulin is of human origin.

7. The method of claim 1 wherein said immunoglobulin is purified from the milk of said mammal.

8. A transgenic non-human mammal all of whose germ cells and somatic cells contain recombinant DNA sequences

encoding immunoglobulin heavy and light chains, wherein said sequences are operatively linked at their 5' termini to a promoter sequence that supports the preferential expression of said genes in mammary gland epithelial cells, and operatively linked at their 3' termini to a sequence containing a polyadenylation site.

9. The transgenic mammal of claim 8 wherein said mammal is selected from the group consisting of mice, cows, sheep, goats, oxen, camels, and pigs.

10. The transgenic mammal of claim 8 wherein said promoter is selected from the group consisting of the casein promoter, the beta lactoglobulin promoter, the whey acid protein promoter, and the lactalbumin promoter.

11. The transgenic mammal of claim 8 wherein said immunoglobulin comprises heavy and light chains.

12. The transgenic mammal of claim 8 wherein said immunoglobulin comprises a single polypeptide chain.

13. The transgenic mammal of claim 8 wherein said immunoglobulin is of human origin.

14. An isolated purified DNA comprising in the 5' to 3' direction

a) 5' promoter sequences from the beta casein gene,

b) a unique Xho I restriction site, and

c) 3' untranslated sequences from the goat beta casein gene, wherein a) comprises nucleotides -6168 to -1 of the goat beta casein, wherein nucleotide 1 is the first nucleotide of the beta casein translation initation codon, b) comprises the sequence CGCGGATCCTCGAGGACC, and c) comprises the sequence

starting at the PpuMI site found at bp648 of the beta casein cDNA sequence, and continuing for 7.1 kb downstream, termininating in the sequence TAAGGTCCAGAGACCGAGACCCACTCACTAGGCAACTGGTCCGRCCAGCTGTTAAGTGA.

15. The DNA of claim 14 wherein an immunoglobulin cDNA is inserted into b), said DNA directing the mammary-gland-specific expression of said immunoglobulin in transgenic animals.

16. The DNA of claim 15 wherein said immunoglobulin comprises heavy and light chains.

17. The DNA of claim 15 wherein said immunoglobulin comprises a single polypeptide chain.

18. The DNA of claim 15 wherein said immunoglobulin is of human origin.